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(56) Documents Cited

WO 97/50057 A1

WO 97/08628 A1

US 5920287 A

US 4832204 A

JP 2000142926 A

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(54) Abstract Title

A method for receiving and shipping items

(57) A method 10 for receiving and shipping vehicles or other manufactured items is disclosed in which the items are assigned several identification numbers 12, 16, 18, 20, 22 and in which the transport conveyances or railcars are similarly and respectively assigned several identification numbers 24.

These identification numbers co-operatively allow the vehicles or other items to be quickly located within a storage yard or facility and to be efficiently and accurately assigned 26 to a transport vehicle or railcar, effective to allow them to be transported to a desired destination. Preferably the shipping system includes a tag such as a transponder or transducer on the item to be shipped and a computer system with the location information from the tag therein. Preferably, the computer has a status indicator which must have been set before the item can be released e.g. to prevent shipping vehicles which need modifications or repairs before release. Preferably the tag has a first, item, code and a second, destination code provided therein. Preferably, the computer system links first to sixth codes to accurately locate the item/vehicle and its shipping vehicle/rail truck and destination.

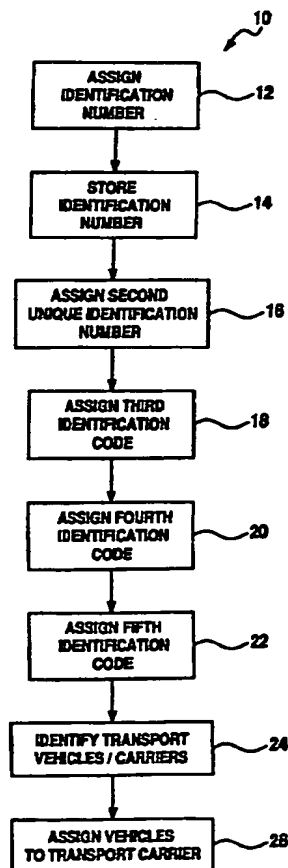


Figure 1

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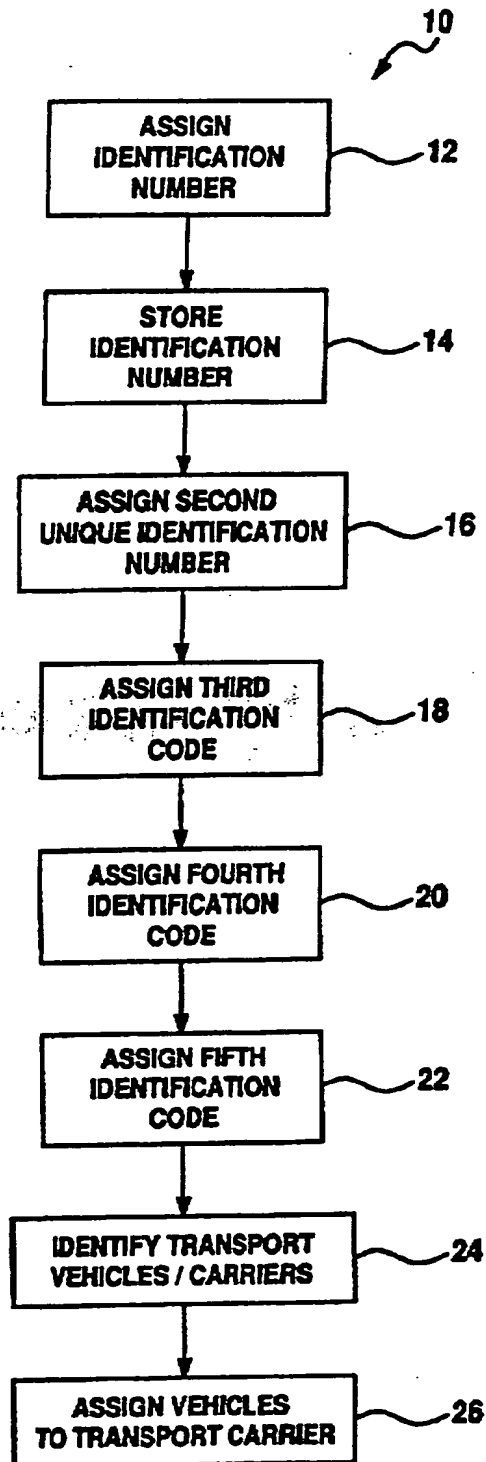


Figure 1

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A METHOD FOR RECEIVING AND SHIPPING ITEMS

The present invention relates to a method for receiving and shipping items and more particularly to a method for receiving manufactured items, such as vehicles which are to be transported to a variety of desired destinations.

Items, such as vehicles, are usually transported to and temporarily stored within a relatively large yard or "staging area" which is relatively close to the manufacturing plant at which the vehicles were created. These vehicles or other items are respectively required to be shipped to a wide variety of locations or destinations and typically remain in the yard until placed upon a truck, railcar, or other vehicle or conveyance for transport to their respective destination.

Typically, vehicles are driven into the yard as they are created by the manufacturing plant. The respective destination of each of these vehicles is usually coded and contained within or placed upon a route code label which is selectively attached to the "passenger side window" of each of the respective vehicles. Oftentimes, these vehicles are placed at any convenient location within the yard and substantially no record is maintained of the current location of each of the vehicles within the yard.

Hence, one or more individuals are typically required to frequently "search the yard" in order to identify groups of vehicles which are "bound for" or which are to be transported to the same destination. Such "manual identification" or manual sorting not only undesirably increases the amount of time required to ship these vehicles but further increases the likelihood of error, thereby causing some of the vehicles to be transported to an incorrect destination.

Further, this arrangement does not allow a certain vehicle to be quickly and easily identified within the yard in order to allow the vehicle to be serviced before shipment. For example, certain quality concerns may arise
5 relative to certain components contained within a manufactured vehicle after it has been placed into the yard but before it has been shipped, thereby necessitating a repair or modification of the temporarily stored vehicle.

10 Hence, it is highly desirable to allow a vehicle to be quickly identified in order to allow the vehicle to be serviced and/or modified before it is shipped.

A number of transport conveyances or railcars are also
15 typically present in close proximity to the yard and are selectively and cooperatively used to transport these vehicles to the respectively required and desired destinations. Each of these conveyances and/or railcars must typically be manually identified by these individuals and
20 correctly associated with a certain destination (i.e. each conveyance or railcar is to travel to a certain destination from the yard and each of these respective destinations must be manually and correctly identified and used with the vehicle destination information to determine the identity of
25 those vehicles which are respectively "loaded onto" each of the conveyances or railcars). Such manual identification not only undesirably increases the overall time and the cost of shipping such vehicles, but also undesirably increases the likelihood of shipment error.

30 It is an object of this invention to provide a new and improved method for receiving and shipping items which overcomes at least some of the previously delineated drawbacks of prior methods.

35 According to a first aspect of the invention there is provided a shipping method comprising the steps of providing

a reception area, receiving an item, placing said item at a certain location within said reception area, providing a status indicator having one of a plurality of values, placing a location determination device upon said item,
5 effective to allow the item to be quickly located within said reception area and shipping said item only if said status indicator has a certain value.

Said item may be shipped to a certain destination and
10 wherein said method may further comprise the step of storing said certain destination.

Said item may be shipped by a transport carrier to said certain destination and said method may further comprise the
15 steps of assigning said item to a transport carrier based upon said stored certain destination.

The transport carrier may be a railcar.

20 The method may further comprise the step of generating a report including the location of said item.

According to a second aspect of the invention there is provided a method for shipping an item to a certain
25 destination comprising the steps of providing a first identification code for said item, providing a second identification code for said certain destination, providing a device, communicating said first and second identification codes to said device and placing said device onto said item
30 wherein said device is used to locate said item and to assign said item to a conveyance, effective to ship said item to said certain destination.

Said item in accordance with said first or said second
35 aspects of the invention may be a vehicle.

The method may further comprise the steps of providing a third identification code representing a status of said vehicle and communicating said third identification code to said device, thereby allowing said status of said vehicle to be selectively ascertained.

Said first, second and third identification codes are selectively stored within a database.

10 The method may further comprise the steps of providing a fourth identification code representing a location of said vehicle within a yard and communicating said fourth identification code to said device, thereby allowing said location of said vehicle within said yard to be selectively
15 ascertained.

The method may further comprise the step of altering said fourth identification code in response to said vehicle being moved within said yard.

20 According to a third aspect of the invention there is provided an apparatus for use in shipping a vehicle, the apparatus comprising a location determination device and a computer wherein a first code is provided representing an
25 identification number of said vehicle, placing said location determination device upon a vehicle, receiving and storing said vehicle, storing said first code and a second code on the computer within a database, cross-referencing said first code to said second code, providing a third code which
30 represents a destination of said vehicle, storing said third code within said database and within said location determination device, providing a fourth code which represents a status of said vehicle, storing said fourth code within said database wherein the computer and said
35 location determination device are used to selectively locate and ship said vehicle.

Said location determination device may comprise a transceiver.

5 Said fourth code may be selectively altered effective to selectively prevent said shipment of said vehicle.

Said vehicle may be held within a yard and a fifth code representing a location of said vehicle within said yard may be provided wherein the fifth code is selectively stored
10 within said location determination device effective to allow said vehicle to be located within said yard.

Said fifth code may be selectively altered, effective to represent a movement of said vehicle within said yard.
15

A sixth identification code may be stored in the database having a certain value which indicates said shipment of said vehicle.

20 The invention will now be described by way of example with reference to the accompanying drawing of which:-

Figure 1 is a flowchart illustrating the sequence of steps included within and/or comprising the methodology of
25 the preferred embodiment of the invention.

Referring now to Figure 1, there is shown a flowchart
10 which illustrates the sequence of operational steps which are included within and/or which cooperatively comprise the methodology of the preferred embodiment of the invention.
30

The flowchart or methodology 10 begins with an initial step 12 in which a unique identification number is assigned to each manufactured or created item, such as a vehicle. It
35 should be appreciated that while the following discussion describes the use of methodology 10 with manufactured vehicles, the methodology 10 may similarly be used with a

variety of other manufactured and/or created items and that nothing in this application should limit the applicability of the methodology 10 to only use with vehicles. Step 14 follows step 12 and, in this step, each unique vehicle
5 identification code is stored within an electronic database stored on an electronic computer which is programmed to assist with the storage and shipping of the vehicles.

Step 16 follows step 14 and, in this step, a second
10 unique identification number is assigned to each manufactured vehicle and each manufactured vehicle receives a selectively readable device or "tag" assembly which is disposed upon or coupled to the vehicle.

15 This tag comprises a location determination device (e.g., a transceiver or transponder) which may selectively transmit geographic coordinates corresponding to the present location of the vehicle or which may be used within a system which selectively interrogates the tag effective to allow
20 the vehicle locations to be identified. One example of such a "tag" or location system is described within United States Patent Number 5,920,287 (the '287 patent).

Each such tag may also include a "bar code" type
25 storage device which may selectively receive and store desired information and which may be selectively read by a "bar code" type or optical scanner.

Particularly, each such tag assembly or device stores
30 the second unique identification code associated with and/or uniquely identifying the vehicle upon which the tag is contained or disposed. Moreover, in this step, each first unique vehicle identification code is associated with or
"cross referenced to" one of the second unique
35 identification codes within the stored database. In the preferred embodiment of the invention, the device may be "read" or automatically scanned as the vehicle enters a

storage yard or reception area. In this manner, each vehicle has a first and a second unique and selectively readable identification code.

5 Step 18 follows step 16 and, in this step, a third identification code is assigned to each of the manufactured vehicles or received items and is respectively indicative of the destination of each such vehicle. The third
10 identification code is stored within the database and may also be stored within the location determination device or tag assembly. Hence, at the conclusion of step 18, each manufactured vehicle may be selectively referenced within a relational or computer database by use of a stored first, second, and third identification code.

15 Step 20 follows step 18 and, in this step, each of the manufactured vehicles is associated with and/or "cross referenced" to a fourth identification code which indicates the status of the vehicle.

20 For example, it may be desirable to allow the manufacturing plant to remove a vehicle from the yard within a certain amount of time after the vehicle has been delivered in order to allow the plant personnel to service
25 or repair on the vehicle. Moreover, it may also be desirable to allow plant personnel or other individuals or entities to place a "hold" condition on the vehicle in order to prevent the vehicle from being shipped due to some identified and potential malfunction. In the preferred embodiment of the
30 invention, only manufactured vehicles having a certain status may be shipped and the respective status may be selectively placed within each of the respective tags (i.e., stored as the fourth identification code).

35 Step 22 follows step 20 and, in this step, each vehicle is assigned a fifth identification code which is respectively indicative of the vehicle's location within the

yard. This location code is altered or modified as the vehicle is moved within the yard. Alternatively, as previously delineated, each tag is adapted to selectively provide this information upon receipt of a request or query type command from a device or a system such as that described within the '287 patent, which allows this "location information" to be selectively obtained. Any of the identification codes assigned to the vehicles may be changed or altered automatically and electronically to reflect a change in status, destination or location within the yard. Step 24 follows step 22 and, in this step, each of the various transport carriers and/or conveyances are identified.

Step 26 follows step 24 and, in this step, each vehicle is assigned to one of previously identified transport conveyances or railcars by a computer or by a dispatcher by use of one or more of the previously mentioned identification numbers.

That is, each "shippable vehicle" (i.e. each vehicle having a certain "shippable" status) is assigned to one of the transport conveyances or railcars such that a vehicle is placed upon a railcar or transport conveyances having a respective destination which is substantially similar to the destination of that vehicle.

A list may be automatically and selectively generated by the computer in order to substantially ensure that the vehicles are correctly "matched" to the railcars and transport conveyances (i.e., a list of all vehicles required to be transported to each respective destination is created).

Further, a sixth identification number can be assigned to each vehicle and this number, having a selected one of several values, indicates whether a vehicle has been

transported or shipped from the yard, thereby allowing a record to be created of the transportation status of each vehicle. Moreover, each readable device or "tag" is removed from each vehicle before the vehicle is shipped and may be
5 used with newly received vehicles in the previously delineated manner.

It should be realised that the invention is not limited to the exact construction which has been described above,
10 but that various changes may be made without departing from the scope of the invention as defined by the following claims.

Claims

1. A shipping method comprising the steps of providing a reception area, receiving an item, placing said
5 item at a certain location within said reception area, providing a status indicator having one of a plurality of values, placing a location determination device upon said item, effective to allow the item to be quickly located within said reception area and shipping said item only if
10 said status indicator has a certain value.

2. A method as claimed in claim 1 wherein said item comprises a vehicle.

15 3. A method as claimed in claim 1 or in claim 2 wherein said item is to be shipped to a certain destination and wherein said method further comprises the step of storing said certain destination.

20 4. A method as claimed in any of claims 1 to 3 wherein said item is to be shipped by a transport carrier to said certain destination, said method further comprising the steps of assigning said item to a transport carrier based upon said stored certain destination.

25 5. A method as claimed in claim 4 wherein the transport carrier is a railcar.

6. A method as claimed in any of claims 1 to 5
30 further comprising the step of generating a report including the location of said item.

7. A method for shipping an item to a certain destination comprising the steps of providing a first
35 identification code for said item, providing a second identification code for said certain destination, providing a device, communicating said first and second identification

codes to said device and placing said device onto said item wherein said device is used to locate said item and to assign said item to a conveyance, effective to ship said item to said certain destination.

5

8. A method as claimed in claim 7 wherein said item is a vehicle.

9. A method as claimed in claim 7 or in claim 8 further comprising the steps of providing a third identification code representing a status of said vehicle and communicating said third identification code to said device, thereby allowing said status of said vehicle to be selectively ascertained.

15

10. A method as claimed in claim 9 wherein said first, second and third identification codes are selectively stored within a database.

20

11. A method as claimed in any of claims 7 to 10 further comprising the steps of providing a fourth identification code representing a location of said vehicle within a yard and communicating said fourth identification code to said device, thereby allowing said location of said vehicle within said yard to be selectively ascertained.

25

12. A method as claimed in claim 11 further comprising the step of altering said fourth identification code in response to said vehicle being moved within said yard.

30

13. An apparatus for use in shipping a vehicle, the apparatus comprising a location determination device and a computer wherein a first code is provided representing an identification number of said vehicle, placing said location determination device upon a vehicle, receiving and storing said vehicle, storing said first code and a second code on the computer within a database, cross-referencing said first

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code to said second code, providing a third code which represents a destination of said vehicle, storing said third code within said database and within said location determination device, providing a fourth code which
5 represents a status of said vehicle, storing said fourth code within said database wherein the computer and said location determination device are used to selectively locate and ship said vehicle.

10 14. An apparatus as claimed in claim 13 wherein said location determination device comprises a transceiver.

 15. An apparatus as claimed in claim 13 or claim 14 wherein said fourth code may be selectively altered
15 effective to selectively prevent said shipment of said vehicle.

 16. An apparatus as claimed in any of claims 13 to 15 wherein said vehicle is held within a yard and a fifth code
20 representing a location of said vehicle within said yard is provided wherein the fifth code is selectively stored within said location determination device effective to allow said vehicle to be located within said yard.

25 17. An apparatus as claimed in claim 16 wherein said fifth code may be selectively altered, effective to represent a movement of said vehicle within said yard.

 18. An apparatus as claimed in any of claims 13 to 17
30 wherein a sixth identification code is stored in the database having a certain value which indicates said shipment of said vehicle.

 19. A shipping method substantially as described
35 herein with reference to the accompanying drawing.

20. A method for shipping an item to a certain destination substantially as described herein with reference to the accompanying drawing.

- 5 21. An apparatus for use in shipping a vehicle substantially as described herein with reference to the accompanying drawing.

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Application No: GB 0123917.7
Claims searched: 1-6

Examiner: Dave McMunn
Date of search: 8 April 2002

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK C1 (Ed.T): B8W (WC).

Int C1 (Ed.7): G06F 17/60. G06K 7/00.

Other: ONLINE : WPI, EPODOC, JAPIO.

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	WO 97/50057 A1 (PAR). See Figs	1
X	WO 97/08628 A1 (K & T). Note retained tag in Fig 6A	1-6
A	US 5,920,287 (WIDATA). See Figs	1
A	US 4,832,204 (ROADWAY). See Figs	1
A	JP 2000142926 A (SEKISUI CHEM). See Figs	1

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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